

## REMARKS

### *Claims*

Claims 1, 5-7, 10-11, 15-16 and 30 have been amended. Claims 2-4, 17-29 and 31-44

5 have been canceled. The claims have been amended to distinctly claim and point out the invention for which protection is sought. Support for the amendments is in the original filed application (e.g. Figure 4) and no new matter was added.

**35 U.S.C. § 102 Rejection**

1. Claims 1-5, 13, 15-20, 28-34, 42 and 44 were rejected under 35 U.S.C. § 102(b) as being anticipated by Johnson (US Patent No. 5,89130,0)

5     The amendments of claim 1 render these rejections moot. Johnson's cited text refers to determining a centerline of a tubular structure (i.e. colon). The plurality of triples of mutually orthogonal planes as in the present claims have nothing to do with centerline determination. Finally, the cited text of Johnson is silent to the combination of elements according to claim 1, which is:

10                 (a) having a shape signature classifier, said shape signature classifier comprises a plurality of shape signatures of different shapes;

15                 (b) determining a shape signature, wherein said determining comprises:

                           (i) having a 3-D volume of a medical image said 3-D volume comprises at least part of a structure;

                           (ii) selecting a shape within said at least part of said structure of said 3-D volume;

                           (iii) generating a plurality of triples of mutually orthogonal planes within said 3-D volume, wherein said triples differ from each other in position, orientation or position and orientation;

20                     (iv) for each set of said plurality of triples determining a plurality of attributes;

                           (v) for each set of said plurality of triples combining said determined plurality of attributes into a feature vector; and

                           (vi) combining said feature vectors into a shape signature defining said selected shape within said 3-D volume, wherein said shape signature is obtained via a vector quantization method; and

25                 (c) classifying said selected shape by analyzing said shape signature of said combined feature vectors in view of said plurality of shape signatures in said shape signature classifier.

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Furthermore, Johnson is silent to detecting and classifying a polyp in a colon using the method of claim 1.

2. Claims 1, 6-12, 14, 16, 21-27, 30, 35-41 and 43 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hibbard (US Patent No. 6,249,594)

The amendments of claim 1 render these rejections moot. Hibbard's cited text refers to  
5 auto-contouring or segmentation of predetermined bounded objects, which is different from the combination of elements in the present claims. The present claims are directed to shape detection and classification. Furthermore, the cited text of Hibbard is silent to the combination of elements according to claim 1, which is:

- (a) having a shape signature classifier, said shape signature classifier comprises a plurality of shape signatures of different shapes;
- (b) determining a shape signature, wherein said determining comprises:
  - (i) having a 3-D volume of a medical image said 3-D volume comprises at least part of a structure;
  - (ii) selecting a shape within said at least part of said structure of said 3-D volume;
  - (iii) generating a plurality of triples of mutually orthogonal planes within said 3-D volume, wherein said triples differ from each other in position, orientation or position and orientation;
  - (iv) for each set of said plurality of triples determining a plurality of attributes;
  - (v) for each set of said plurality of triples combining said determined plurality of attributes into a feature vector; and
  - (vi) combining said feature vectors into a shape signature defining said selected shape within said 3-D volume, wherein said shape signature is obtained via a vector quantization method; and
- (c) classifying said selected shape by analyzing said shape signature of said combined feature vectors in view of said plurality of shape signatures in said shape signature classifier.

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### Conclusion

The Applicant hereby submits a bona fide attempt to address the rejections in the Office Action and argues why the present claims are different from the art of record. The Examiner is sincerely invited to telephone the undersigned at 650-424-0100 for 5 clarification or any suggested actions such as an Examiner's Amendment to accelerate prosecution and forward the present application to allowance. Allowance of the claims now in the application is kindly requested.

Respectfully submitted,

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